

North Permian Basin Region
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Lab Team Leader - Sheila Hernandez
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Water Analysis Report by Baker Petrolite

Company:	B P AMOCO INCORPORATED	Sales RDT:	33512
Region:	PERMIAN BASIN	Account Manager:	WAYNE PETERSON (505) 910-9389
Area:	ARTESIA, NM	ID #:	23363
Lease/Platform:	JAGUAR '26' FEDERAL LEASE	Analysis Cost:	\$40.00
Entity (or well #):	1		
Formation:	UNKNOWN		
Sample Point:	WATER TANK		

Summary		Analysis of Sample 163710 @ 75 °F					
Sampling Date:	12/13/01	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	12/20/01	Chloride:	56068.0	1581.47	Sodium:	27949.7	1215.74
Analyst:	JAMES AHRLETT	Bicarbonate:	228.1	3.74	Magnesium:	802.0	65.98
TDS (mg/l or g/m3):	92336.8	Carbonate:	0.0	0.	Calcium:	5047.0	251.85
Density (g/cm3, tonne/m3):	1.06	Sulfate:	73.0	1.52	Strontium:	1507.0	34.4
Anion/Cation Ratio:	1	Phosphate:			Barium:	17.0	0.25
		Borate:			Iron:	192.0	6.94
		Silicate:			Potassium:	453.0	11.59
Carbon Dioxide:	490 PPM	Hydrogen Sulfide:		1 PPM	Aluminum:		
Oxygen:	0 PPM	pH at time of sampling:		7.3	Chromium:		
Comments:		pH at time of analysis:			Copper:		
		pH used in Calculation:		7.3	Lead:		
					Manganese:		
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO3		Gypsum CaSO4*2H2O		Anhydrite CaSO4		Celestite SrSO4		Barite BaSO4		CO2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.99	20.48	-1.40	0.00	-1.43	0.00	-0.14	0.00	1.01	8.32	0.09
100	0	1.02	23.04	-1.45	0.00	-1.41	0.00	-0.15	0.00	0.83	8.00	0.13
120	0	1.04	25.60	-1.48	0.00	-1.36	0.00	-0.15	0.00	0.68	7.36	0.18
140	0	1.08	28.48	-1.50	0.00	-1.29	0.00	-0.14	0.00	0.55	6.40	0.25

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

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